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FINDING OF NO SIGNIFICANT IMPACT

WILSON HYDRO PLANT MODERNIZATION OF HYDROTURBINES

The Proposed Action

The Tennessee Valley Authority (TVA) proposes to rehabilitate and modernize (hydromodernize or HMOD) eleven generating units (#1-8 and #19-21) at Wilson Hydro Plant in Lauderdale and Colbert Counties, Alabama. The proposed action consists of replacing the turbines as well as reworking, refurbishing, and/or replacing associated generating and switchyard components. The total generator rating would increase from 670 to 742 megawatts and the maximum flow for the plant would increase from 104,000 to 110,000 cubic feet per second.

Background

Wilson Hydro Plant generating units 9-18 were rehabilitated and modernized between 1994 and 2000. Due to their age and condition, TVA must rehabilitate the remaining eleven generating units. The proposed action would allow TVA to continue to maintain safe and reliable peak power generation at Wilson Hydro Plant, while improving operational efficiency, increasing generating capacity, and increasing net income from the power system. The capacity gains and efficiency improvements would help TVA meet projected demands for peaking power and the modernization of hydro plants was selected in TVA's 1995 Energy Vision 2020 Integrated Resource Plan/Environmental Impact Statement as one of the ways TVA would add generating capacity to its system.

Alternatives

TVA considered two alternatives to rehabilitating the eleven generating units (#1-8 and 9-12) at Wilson Hydro Plant. Under the No Action Alternative, TVA would continue to maintain and/or replace generating components on an as-needed basis. Neither the overall operating efficiency of the eleven turbines, the plant generating capacity, or the maximum flow would change.

Under the Wilson HMOD Alternative (the Action Alternative), TVA would replace the eleven generating units and associated equipment. This would be carried out consecutively by individual units during the years 2008 through 2013 or 2014.

The construction activities that would occur under both the No Action and the Wilson HMOD Alternatives are similar. Most activities would occur inside the hydro plant, switchyard areas, and previously disturbed areas on the plant site used for lay down areas.

Under both alternatives, TVA would also stabilize eroding shoreline to protect important archaeological sites in the Wilson Dam tailwater area.

Impact Assessment

The Environmental Assessment (EA) concludes that little or no direct impact on water quality, aquatic life, wetlands, terrestrial ecology, endangered and threatened species, air quality, archaeology, and environmental justice would result from the generating unit

rehabilitation and/or replacement activities that would occur under either alternative. Resource areas that could be affected by these activities include managed areas,

recreation, and visual resources (through increases in noise and traffic during construction), as well as socioeconomics; these increases would be temporary and insignificant. Wilson Dam and Power House is a National Historic Landmark and some of the plant components that would be rehabilitated and/or replaced may be historically significant. All such components would be inventoried and evaluated, and significant elements would be preserved or documented. The site's historic landmark eligibility status would therefore not be adversely affected.

The flow changes that would occur following HMOD activities include increases in volume, velocity, and depth during generation. The magnitude of these changes is small and little change in dissolved oxygen levels or water temperature in the tailwater is expected. The increased water velocity and depth would result in a small increase in the rate of shoreline erosion that is already occurring in the Wilson tailwater. The erosion would result in increases in sedimentation and erosion of archaeological sites that are listed, or eligible for listing, on the National Register of Historic Places. Because of the potential for adverse effects to these archaeological sites, TVA would either stabilize the shoreline at significant sites or conduct archaeological data recovery excavations. TVA has executed a Memorandum of Agreement with the Alabama State Historic Preservation Officer describing this treatment plan. With implementation of this treatment plan, impacts to archaeological sites would be insignificant.

The proposed archaeological site stabilization have the potential to adversely affect several mussels listed as endangered under the Endangered Species Act. Because of this potential for adverse effects, TVA entered into formal consultation with the U.S. Fish and Wildlife Service (USFWS) over the proposed activities. In a Biological Opinion issued December 2, 2004, the USFWS concluded that the proposed activities, with the implementation of several reasonable and prudent measures and associated terms and conditions jointly developed with TVA, would not jeopardize the continued existence of the seven species considered in the BO. TVA has concluded that the potential impacts to endangered and threatened species, as well as other aquatic life, would be insignificant with implementation of the associated measures, terms and conditions.

Mitigation

The proposed action contains standard measures such as the use of Best Management Practices and methods of waste disposal, to reduce the potential for adverse impacts. The following commitments have been in various media sections of the EA as measures necessary to avoid or mitigate potential adverse effects related to adoption of one or both of the alternatives. These measures constitute commitments that TVA would follow to better assure minimum and insignificant potential impacts on the archeological and environmental resources of the Wilson Hydro Plant and tailwater.

1. All historically significant components that would be replaced or modified would be documented by an industrial archaeologist with concurrence of the AL SHPO. Unique or rare components that are not earmarked as replacement/spare parts would be preserved.
2. The phased archaeological assessment and protection process (agreed to by the SHPO), including an MOA and future shoreline stabilization efforts to protect the archeological sites potentially affected by the Wilson HMOD will continue until fully implemented per the details of the Archaeological Survey Report and site prioritization and required (via MOA) future consultation with the SHPO.

3. Avoid the use of species found on the Invasive Plant Species of High Priority to TVA and the Tennessee Exotic Pest Plant Council lists in any revegetation work.
4. Utilize seed mixes for re-vegetation and erosion control comprised of native species or non-invasive, non-native species during any revegetation work.
5. Stabilization activities requiring bank disturbance or work from the landward side of the bank for any of the stabilization sites will require that TVA wetland biologists conduct an on-site wetland determination and be consulted on impact avoidance and minimization. Appropriate federal and state permits will be obtained as necessary.

Reasonable and prudent measures required by the USFWS are:

6. When avoidance of mussel beds is not possible, actions to minimize the impact to mussels would be implemented. When TVA personnel determine a known mussel bed would be impacted by shoreline stabilization efforts, TVA would implement a salvage/relocation effort for all federally listed mussels. Mussels would be relocated to a suitable habitat.
7. Minimize the siltation of aquatic habitats. Measures will be employed to prevent sedimentation of the river to the maximum extent possible. When barges and tugboats are utilized, reduce the extent of prop wash stirring up the bottom substrates and habitats that may contain listed mussel species.
8. Measures will be employed to minimize the potential for degradation of water quality.
9. Minimization of riverbank and river island vegetation removal.
10. Use of BMPs during all phases of riverbank and island shoreline stabilization efforts.

Terms and conditions to carry out the reasonable and prudent measures are:

11. Implement appropriate preventive measures to minimize the potential for hazardous materials (e.g., hydraulic fluid, oils, lubricants, fuel) from leaking onto the ground or into the water. Have in-place a Hazardous Material/Fluid Spill Prevention Plan to address accidental spills/leaks.
12. In instances when riprap would need to be placed below low wither pool elevation to properly protect the bank, TVA malacologists would conduct a site tour of these locations to determine potential impacts of this action on mussel species. If visual observations can not conclude the absence of listed mussel species in or near the footprint of the riprap placement, a mussel presence/absence survey would be necessary. These surveys would need to be conducted by divers and biologists familiar with the listed species discussed in the BO. The survey protocol guidelines are listed in Appendix B of the BO.
13. TVA and USFWS biologists would mutually agree on at least two mussel relocation sites prior to implementation of the proposed project. These sites would have an established mussel population and would exhibit the habitat features needed to sustain the 7 listed mussel species that would be relocated to these areas.
14. When stabilization activities are deemed necessary, or are to occur, between TRM 249.0 and TRM 250.0, the USFWS would need to be contacted in advance of any work for assistance in properly positioning the barge and tug boat to prevent disturbance of the nonessential (or “pilot”) populations located in this reach (i.e., Buck Island Chute area).
15. TVA is required to report to the USFWS project-specific information of their proposed actions and site-specific areas to be affected by their actions (i.e., provide location of project site, extent of impact area, and anticipated impacts of

stabilization activities on listed mussels). This report would be appended to the programmatic BO utilizing the format found in Appendix C of the BO.

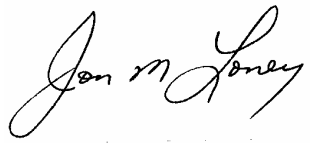
In order to have some measure of the effectiveness of the reasonable and prudent measures, as well as a better understanding of local biological trends:

16. TVA will continue its ongoing water quality and biological community monitoring efforts and will also, as time and budgets allow, assist other biological survey efforts in the Wilson tailwaters.

Conclusion and Findings

The Final Environmental Assessment for this proposal concludes that the proposed HMOD activities, as well as the shoreline stabilization work that would occur under either alternative, would not result in significant adverse impact upon the environment. This conclusion takes into account the implementation of the standard commitments, such as the use of Best Management Practices. It is also based on the implementation of the mitigation measures mentioned above.

Environmental Policy and Planning's NEPA Administration staff reviewed the Final EA and agreed with this conclusion, and determined that the preparation of an environmental impact statement is not required.



January 28, 2005

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Date